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A STUDY OF INTERNAL CONTROL AND  
EXTERNAL AUDITING OF COAST GUARD  
NON-APPROPRIATED FUND ACTIVITIES

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# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



# THESIS

A STUDY OF INTERNAL CONTROL AND  
EXTERNAL AUDITING OF COAST GUARD  
NON-APPROPRIATED FUND ACTIVITIES

by

Jimmie L. Sether

March 1979

Thesis Advisor:

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A Study of Internal Control And  
External Auditing of Coast Guard  
Non-Appropriated Fund Activities

by

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Lieutenant, United States Coast Guard  
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Submitted in partial fulfillment of the  
requirements for the degree of

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from the

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## ABSTRACT

The rapid expansion of Coast Guard Non-appropriated Fund operations within the past few years has necessitated the requirement for increased attention to internal control of exchange activities. This thesis describes the major features of an internal control system for Coast Guard NAF activities and provides recommendations concerning selection of an external audit approach to review these systems. A survey of three representative Coast Guard exchanges was conducted to determine current Coast Guard approaches to internal control. Results of the survey indicated that internal control within the NAFA organization could be strengthened through the promulgation of internal control guidelines as detailed in Table I. An analysis of four alternatives was accomplished to determine the most cost effective approach to external auditing. Although the results of this analysis indicated that use of a national accounting firm appeared to be the most cost effective method for external auditing, it was recommended that further investigation be conducted with additional data prior to selecting an external auditor.



## TABLE OF CONTENTS

I.	Introduction .....	8
II.	Internal Control Systems.....	14
	A. Cash Receipts.....	19
	B. Cash Disbursements.....	21
	C. Accounts Receivable and Sales.....	22
	D. Inventories.....	23
	E. Accounts Payable.....	25
	F. Plant and Equipment.....	27
	G. Investments.....	27
III.	Current Approaches to Internal Control.....	29
	A. Cash Receipts and Disbursements.....	31
	B. Inventories/Purchasing.....	32
	C. Accounts Payable.....	34
	D. Investments.....	35
	E. Fixed Assets.....	36
IV.	Analysis of External Auditing Methods.....	40
V.	Conclusions and Recommendations.....	57
	Tables I-IV.....	63-80
	Illustrations 1-7.....	81-87
	References.....	88
	Bibliography.....	89
	Initial Distribution List.....	90



## LIST OF TABLES

- I. Sample Internal Control Questionnaire
- II. Audit Survey
- III. Listing of Top Twelve Exchanges and Gross Sales
- IV. A Small Business Internal Control Questionnaire





## LIST OF ILLUSTRATIONS

1. Flowchart of Cash Receipts
2. Flowchart of Cash Disbursements
3. Flowchart of Accounts Receivable
4. Flowchart of Inventory
5. Flowchart of Purchases
6. Flowchart of Sales
7. Graph of Percent Gross Sales vs. Percent Exchanges



## I. INTRODUCTION

The Coast Guard Non-appropriated Funds Manual (CG-146) requires commanding officers of all units operating exchanges with gross annual sales equal or exceeding \$150,000 to utilize independent audit services for annual audits. A major implication of this requirement concerns the study and evaluation of existing internal controls at the unit. As established by the AICPA Committee on Auditory Procedure in the Standards of Auditing Field Work, the independent external auditor is required to make a study of the internal control system in order to give basis to the direction and extent of his field work. While these auditing requirements affect many of its Non-appropriated Fund operations, the Coast Guard has established only limited guidance to assist commands in the establishment of appropriate internal control systems and in the selection of qualified auditors. Thus, the purpose of this thesis is twofold: (1) to describe the major features of an internal control system for Coast Guard NAFA operations; and (2) to provide recommendations concerning selection of an external audit approach to review internal control systems.

The scope of the research was limited to a survey conducted at three representative Coast Guard exchanges and to personal experience with a small segment of the NAFA organization. The selection of the three particular exchanges



served two purposes. First, the exchanges at the USCG Academy in Connecticut, Air Station Mobile in Alabama, and Alameda Training Center in California provided a geographical variance to reduce a potential bias in the data from local public accounting firms currently used for annual audits. In addition, the level of operations of the three exchanges surveyed plus the observations gained from personal involvement in the NAFA system provided a review of the NAFA spectrum of small, medium and large operations. For the purpose of this study, exchanges at the Academy and the Air Station were considered large and the Alameda exchange was considered medium. The small exchange observations were based on personal experiences while serving as exchange officer on board the USCGC BURTON ISLAND. The survey was considered to adequately represent the Coast Guard exchange system as aggregate gross sales of the operations surveyed totalled over 15% of the entire Coast Guard's FY77 sales.

The Coast Guard's NAFA system functions within a highly varied operating environment, and unlike other military service exchange systems, utilizes a decentralized concept to operate within the normal chain of command. For smaller activities, the commanding officer is responsible for assigning administrative duties for the operation of these activities to personnel attached to his command. Units maintaining large exchanges have specifically assigned exchange officers. A strong system of internal control, if maintained



properly, can offset the inexperience of the exchange officers at smaller activities.

Based on discussions with various NAFA personnel, it was determined that a drive currently exists in the Coast Guard to make many of the smaller exchanges satellites of larger exchanges in order to gain advantages such as volume discounts through centralized purchasing. While this implies decreased administration requirements for smaller units, it suggests the importance of adequate internal controls at large units due to the size and complexity of the operations that will result. The anticipated growth of sales provides additional emphasis to the significance of maintaining adequate internal controls in the NAFA system. Gross sales have been rising nearly 5% annually over the past few years and projection for FY79 sales were over \$80,000,000 (Ref. 1). The NAFA system has also expanded in scope such that it now includes exchanges, commissaries, package stores, theatres, bowling facilities, dining facilities, golf facilities and a host of other concession services. A concern is generated for stronger internal controls due to the increasing amounts of cash flow, rising inventories, expansion of documentation required to maintain administrative and financial integrity, and the increase in staff levels required to support the operations.

Chapter II describes the basis of an internal control system and its applicability to the functions within the





Coast Guard NAFA system such as cash controls, accounts receivable, accounts payable, inventories and investments. A sample internal control questionnaire and various flowcharts are detailed as guides for field units to review or establish internal control systems. The internal control flowcharts, if utilized, will also provide auditors a basis for the determination of their audit scope for these activities. The guidelines presented are developed on the basis of information obtained through interviews with various audit firm personnel as well as the literature on internal control.

Chapter III indicates current approaches of Coast Guard NAFA units to internal control. The data utilized was obtained through personal visits with, and a questionnaire (Table III) distributed to, the three units surveyed. The survey results are presented in the categories discussed in Chapter II to allow for ease of comparison between what an appropriate internal control system should contain and what Coast Guard units presently maintain as internal control systems.

While Chapters II and III concentrate on the establishment of internal control systems at Coast Guard NAFA's, Chapter IV analyzes alternative ways for external auditors to assist managers in monitoring and fine-tuning these systems. The objective of the analysis is to determine the most cost effective approach, and to suggest the basis for a model to effect this analysis, for external auditing of



Coast Guard exchanges. The criteria utilized in this analysis concerns an estimate of the benefits of each audit approach based on a weighted internal control checklist, the effectiveness of each alternative based on this estimate, and the estimated cost of the audit.

Basically, the four alternatives presented consist of:

1. Contracting the services of a national accounting firm
2. Utilization of local public accounting firms
3. Developing a service-wide Audit Agency
4. Considering a mix of alternatives 1 and 2

Chapter V includes an overall summary of Chapters II, III, and IV and presents conclusions and recommendations based on the findings of the research. The results of the survey essentially confirm initial beliefs that internal control of NAFA's can be strengthened through the promulgation of appropriate guidelines to field units maintaining exchanges. The conclusion also identifies the importance of maintaining established internal control systems through the periodic use of external audits.

Chapter V offers recommendations for future Coast Guard policy formulation and for further research to improve upon the internal control systems for NAFA's. The principle recommendations concern publishing guidelines to field unit exchange officers/managers to assist them in the review and implementation of their internal control systems, and in the



appropriate selection of external audit approaches to effect proper maintenance of their systems. Major emphasis on further research is suggested for determining the feasibility of a service-wide audit agency, contracting the services of a national accounting firm, and further refining of internal control criteria based upon the size of the NAF operation.



## II. INTERNAL CONTROL SYSTEMS

The purpose of this chapter is to describe the significance of an internal control system and its major components applicable to Coast Guard Non-appropriated Fund Activities. Since the scale of the operation is a major factor contributing to the degree of control necessary for each component of the system, emphasis is placed on distinguishing between the controls applicable to the large and small scale activities.

Given the need for the efficient operation of a NAFA, internal control

"...comprises the plan of organization and all of the coordinate methods and measures adopted within a business to safeguard its assets, check the accuracy and reliability of its accounting data, promote operational efficiency, and encourage adherence to prescribed managerial policies.<sup>1</sup>

Thus an internal control system is designed to provide not only for a reasonable degree of assurance against fraud and embezzlement, but also for the dependability of the accounting functions to monitor activities as diverse as employee training programs, internal auditing and quality control. In addition, the system is extremely beneficial to the independent auditor as it may enable him to "determine the

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<sup>1</sup>American Institute of Certified Public Accountants, Internal Control Bulletin, p. 6, 1949.





extent and direction of the auditing work necessary to permit him to express an opinion as to the fairness of statements."<sup>2</sup> The system of internal control is an essential element in determining the extent of time and effort an external auditor feels he must associate with the activity. If he feels the system is dependable, then less field work effort is necessary to convince him of the efficiency of the operation. In turn, audit costs are minimized.

There are basically two types of internal control, accounting and administrative. Records of accounting controls are primarily utilized by independent auditors during their field work. The administrative or "management" controls are established to provide operational efficiency and adherence to prescribed policies throughout the activity's operations.

Within the Coast Guard, the need for formalized systems of internal control has stemmed from the increasing size and complexity of NAFA's during recent years. Discussions with economic review individuals at Coast Guard Headquarters (G-FER) indicate that exchanges have generated increasing revenues and expanded operations considerably over the past few years to justify this need (Ref. 1). Managers are now less able to rely solely on personal observation as a means of appraising the efficiency of the operation and the

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<sup>2</sup>Larsen, E. John, and Meigs, Robert F., and Walter B., Principles of Auditing, 5th ed., p. 124, Irwin, 1973.



financial position of the activity and must increasingly depend on accounting and other management reports. A well designed internal control system contributes to the reliability of these reports not only for management's own use, but also for reporting accurate information to users of this data such as creditors, customers, employees and the Department of Transportation.

Since each activity operates under conditions peculiar to its size, location and services, no standard system of internal control will satisfy the needs of all the Coast Guard NAFA operations. However, Meigs, Meigs, and Larsen indicate four elements which are essential to any satisfactory internal control system:

1. A logical plan of organization, which establishes lines of authority and responsibility and segregates the operating, recording, and custodial functions.
2. An adequate accounting structure, including budgetary and cost accounting techniques, ..., procedural manuals, and charts depicting the flow of transactions.
3. An internal auditing staff reporting to a member of the top management group charged with the responsibility of continuous survey, evaluation, and improvement of internal controls.
4. Personnel with the ability and experience required to perform satisfactorily the responsibilities assigned to them.<sup>3</sup>

Point one is perhaps the most significant element of an internal control system as it stresses separation of

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<sup>3</sup>Ibid., p. 129.



responsibility. The publication of this segregation of responsibility in the organization plan provides a system of checks and balances to guard against the potential mis-handling of assets and records. Compliance with the concept can strengthen the efficiency of operations and produce a warning signal when an error, intentional or accidental, is present in the system. The larger exchanges are capable of meeting this requirement to varying degrees. For instance, an activity the size of Mobile Air Station or the Coast Guard Academy (5 to 7 million dollars annually) can successfully accomplish effective separation of responsibilities since the volume of operation can support adequate staffing with qualified personnel. An operation the size of Alameda (\$700,000 annually), however, cannot support the staffing level needed to fully separate functions and responsibilities. Small scale exchanges (ships and small stations grossing less than \$100,000 annually) function only with an average of 2 to 4 personnel, and thus are severely constrained in segregating responsibilities.

A key element in determining an adequate accounting structure as indicated in point 2 is a systems flowchart. A flowchart details the activities and transactions as they should occur within the system and displays the inter-relationships among activities within the accounting system. These flowcharts can be valuable tools not only for problem solving and policy adherence decisions, but also as a basis for



auditing. While flowcharts should reflect the operating characteristics unique to each activity, several basic concepts exist as the basis of any internal control system. Illustrations 1 through 6 on pages 81-86 were developed as simplified diagrams to portray these concepts and can be used by activities for the development of flowcharts.

Coast Guard activities do not maintain an internal audit staff as defined in point 3 above because the expertise needed is neither available nor required at present. Internal audit boards do exist, however, to conduct periodic cash counts and inventory verifications.

Capable, responsible personnel are key elements of an internal control system, particularly when the system cannot provide for adequate separation of responsibility. As personnel properly perform the functions for which they are responsible, the system is more able to provide accurate information and protection of its assets. Larger exchanges can generally attract the experienced and qualified personnel for the staffing requirements necessary to support the level of operations. The smaller exchanges are often operated by capable military personnel designated by the command to perform basic functions such as small scale ordering and sales clerk.

Given the basic elements and flowcharts of an internal control system, the essential features of an internal control model for Coast Guard activities are outlined and





discussed below. In addition, Table 1 on pages 63-71 was developed as a model specifically designed to assist Coast Guard managers in reviewing and developing internal control systems. The questionnaire in the Table is based on a review of literature which included a Haskins and Sells Internal Control Questionnaire, Form 266 (1-71), an internal control questionnaire appearing in the July 78 issue of Journal of Accountancy, and internal control material obtained in an auditing class from a former Naval Postgraduate School instructor, LCDR James Robertson, SC, USN.

#### A. CASH RECEIPTS

As the most liquid of assets, cash is perhaps the most important focus of an internal control system. Basically, a good system of internal control should assure management that all cash which should have been received, has been received and has been accurately recorded. In addition, it provides assurance to management that cash on hand and in the bank can be reconciled accurately, and that cash is maintained at an adequate level consistent with actual and budgeted cash flow.

Cash control is strengthened with separation of responsibilities for each aspect of a cash transaction. Large scale exchanges adapt more easily to internal control of cash handling procedures than do the smaller exchanges due to greater staffing levels. For instance, control over



cash sales is strengthened when the person opening the mail does not post the information directly to the individual accounts in the subsidiary ledgers. The greater the number of individuals involved in the cash handling process, the less chance exists for any one person to commit fraud or for an erroneous transaction to occur.

As most Coast Guard exchanges are small, they are unable to establish a full separation of all cash handling responsibilities. There are, however, several universal rules for achieving internal control over cash handling which can be instituted by even the smallest operation. These are:

1. Do not permit any one employee to handle a cash related transaction from beginning to end.
2. Separate cash handling from record keeping.
3. Centralize receiving of cash as much as possible.
4. Locate cash registers so that customers can observe the amounts recorded.
5. Record cash receipts immediately.
6. Deposit each day's cash receipts intact.<sup>4</sup>

Table I and Illustration 1 present a sample questionnaire and flowchart to provide guidance to units concerning internal control of cash receipts.

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<sup>4</sup>Ibid., p. 155-156.



## B. CASH DISBURSEMENTS

The most significant controls over cash disbursement involve proper authorization of expenditures and accurate record keeping of all disbursements. All disbursements should be made by check and only for authorized business purposes. To facilitate the accurate accountability of such a system, prenumbered series checks are generally utilized. Principal advantages of using the checking system to make disbursements include obtaining a receipt from the payee, the centralization of the disbursement system, a permanent record of all disbursements (cancelled checks), and a reduction in the amount of cash on hand.

Many activities also maintain imprest petty cash funds for incidental expenses. The important control feature of this fund is ensuring expenditure receipts match the amount expended from the fixed balance recorded at the beginning of the accounting period.

Cash disbursement procedures are fairly universal in that similar internal control factors apply to both large and small exchanges. Problems related to separation of responsibility, however, must be recognized and adjusted for by the small exchanges. For instance, in a small two-man operation, as on a vessel, it would be difficult to require the individual who signs the checks to be prohibited from controlling the petty cash fund, approving the cash disbursements, recording cash receipts and posting to the ledger accounts.



When it is evident that proper division of duties cannot be accomplished, the designation of honest, competent individuals plays an important role in the efficient operation of cash handling procedures. In addition, the extent of executive control and oversight exercised by the exchange officer can often offset the limitations imposed due to low staffing levels (Ref. 2). For instance, the small unit exchange officer, by taking part in the routine details of the cash disbursement, adds integrity to the system.

Table I and Illustration 2 provide a recommended questionnaire and flowchart for units concerning cash disbursement controls.

#### C. ACCOUNTS RECEIVABLE AND SALES

Internal controls of accounts receivable and sales are generally considered together as they both involve customers' orders. Controlling these orders generally entails extensive operating procedures to avoid potentially costly errors such as price or quantity discrepancies, lost or non-serialized sales invoices, or unrecorded accounts receivable. Separation of responsibilities is the major means of providing internal control of sales through the division of duties for approving credit, preparing the sales documents, issuing merchandise from inventory, shipping, billing, recording to accounts, verifying invoices, approving credit, and approving returns.





Systems associated with larger exchanges require greater attention to the above functions than systems of smaller exchanges, due to the volume of merchandise involved. The systems of smaller scale exchanges, however, usually do not contain sufficient personnel to accomplish these functions. In addition, these systems usually involve less frequent orders, lower daily sales, smaller inventories, and the sale of commodities which are non-returnable such as health care products, cigarettes and candies.

The basis of sales control rests with the accurate and timely recording of the sales information and the verification of this data through the billing process. Invoices should be serially numbered to aid in the recording process.

Because of credit policies, accounts receivable generally do not present a problem to Coast Guard exchanges. However, they do exist at several units. Table I and Illustration 3 provide guidelines for units concerning internal control for accounts receivable and sales.

#### D. INVENTORIES

Internal control of inventories is often ignored in many organizations because management may feel that items are not pilferable or the system of controls is sufficient to detect theft. The notion that good internal controls only guards against theft is outmoded, however. Internal control of inventory also concerns functions associated with the



efficient utilization of capital invested in inventory, such as on-hand inventory levels, reorder point levels, excess stockpiling, and deterioration or spoilage of goods. If management is not maintaining current and appropriate information regarding its inventory operations, it may be wasting far more resources than might be occurring from fraud or theft. Also, lack of published inventory controls can be an encouraging factor to the inducement of pilferage or material destruction.

Good internal control of inventory is also a means of providing accurate information to management for pricing and costing decisions. This information stems from the physical and recording functions of inventory; physical control involves the purchasing, receiving, storing, issuing, processing and shipping functions while the recording controls include the cost and inventory accounting system.

A key internal control characteristic is having separate departments maintain exclusive authority for each physical function. Accordingly, large scale operations are more capable of providing this exclusive authority for each function because of their organizational staffing structures. Even in the smallest activities, however, the individual conducting the purchasing should at least be independent from the other physical inventory related functions. The key elements of a successful inventory management system are similar for both large and small scale exchanges as emphasis



is placed on proper safeguards, periodic counts, record keeping and reordering rather than separation of responsibility. However, when it can be accomplished, ensuring that the same individual is not solely responsible for the record keeping and periodic counting of the inventory is an important control. Other major control features include the use of serially numbered purchase orders for all business purchases and a regular review of prospective purchases. Control of the recording functions includes order authorization, preparation, review and follow-up. Also, the periodic physical count of inventory reinforces the other controls in force and ensures an accurate end of period inventory amount.

Table I and Illustration 4 provide guideline questionnaires and flowcharts for units concerning internal control of inventory.

#### E. ACCOUNTS PAYABLE

The major function of internal control of accounts payable is recording all legitimate payables. However, there is usually little danger of unrecorded liabilities because this debt is a receivable of a creditor who generally will not overlook it. While not a rationale for inadequate record-keeping, this circumstance does indicate that creditor self-interest is a protective device against unrecorded or inaccurate accounts payable.



Strong internal control of accounts payable provides assurance that goods have been received in accordance with the purchase orders before invoices are paid. Comparison of invoice prices, discounts, and returns, if any, with receipt documents can provide additional assurance against incorrect payments. Requiring monthly balancing of accounts payable and reconciliation with the general ledger also strengthens the internal controls. Separation of responsibility is essential in that payment of invoices should only be made upon approval by an appropriate responsible individual after acceptance of material. Further, appropriate documentation from purchasing, receiving and accounting should exist to support the certification of an invoice for payment.

Large scale exchanges can provide the internal controls necessary to properly maintain an accounts payable system. Small scale exchanges can maintain all the required records and prepare the necessary documentation to support payment of invoices. Due to the limited number of personnel, however, the separation of responsibilities between the functions (i.e. purchasing, receiving, accounting) usually cannot be accomplished. When consolidation of these functions is necessary, selection of competent individuals to carry out these functions becomes essential to the strengthening of the internal control system. The degree to which the exchange manager oversees the account payable function also contributes to the maintenance of an effective system.





Table I and Illustration 5 provide guidelines to units for internal control of accounts payable.

#### F. PLANT AND EQUIPMENT

Internal control of plant and equipment assets strives for maximum efficiency of their use because the dollar amount of these assets generally represents a major commitment of capital.

A primary control of these assets is a plant and equipment schedule which provides an essential basis for depreciation allowances as well as a basis for replacements and additions to the plant facilities. Other important internal control devices include maintaining individual subsidiary ledger accounts for each piece of equipment, a system of executive approval of all plant acquisitions, prompt disclosure of equipment cost/expenditure discrepancies, periodic physical inventories, and established equipment retirement procedures. Table I provides guidelines to units concerning internal control of plant and equipment assets.

#### G. INVESTMENTS

Short term investments should generally be considered by Coast Guard activities having cash on-hand in excess of the normal needs. Investments should be approved and controlled only by upper level management and the risks taken should be minimal. Investment records should be periodically reviewed to insure revenues from investments are collected and recorded accurately.



Sections A through G describe and Table I and Illustrations 1-6 summarize the key features of a basic internal control system. However, it is recognized that the size and uniqueness of many of the operations may prohibit the full implementation of the basic system. Using Table I and the Illustrations as a guide, the unit should determine the internal control criteria appropriate for its operations. When developed, unit internal control checklists should then be utilized by the internal audit board when conducting the periodic audits of the non-appropriated fund operations. Those items in Table I indicated by an (\*) are considered vital to any internal control system and should be achieved by even the smallest Coast Guard exchange.

This chapter has presented the basis for an internal control system and the key features applicable to Coast Guard Non-appropriated Fund Activities. Broad guidelines were presented for each key feature as a basis for future Coast Guard policy promulgation. Chapter III will report the results of a survey of current approaches utilized by Coast Guard NAFA's concerning internal control systems compared and contrasted with the guidelines presented in this chapter, Table I and Illustrations 1-6.



### III. CURRENT APPROACHES TO INTERNAL CONTROL

Using the guidelines expressed in Chapter II, this chapter discusses current approaches to internal control utilized by Coast Guard Non-appropriated Fund Activities. In view of the number of Coast Guard exchanges in existence, it was determined that a pilot survey of activities of various sizes (those listed in Chapter I) would be most appropriate for reviewing current approaches. Several advantages resulted from the use of this pilot survey, the primary one being a preliminary testing of the beliefs about internal control with the sample exchanges prior to surveying the entire NAFA organization. Another significant advantage was the potential for discovering approaches or other factors unforeseen prior to the survey. A third advantage was an economic one in that the results of the pilot study may have indicated that no future effort would be necessary. Finally, observations of the three particular exchanges in the survey facilitated the familiarization process with the entire NAFA system.

The methodology utilized to evaluate the present systems of internal control at the activities was discussed with R. Smith, an Economic Review Analyst, at Coast Guard Headquarters (G-FER), and it was determined that the approach would be appropriate for the pilot survey (Ref. 1). The methodology included distribution of a sample internal



control questionnaire (included herein as Table II), a review of the external audit reports, a review of activity internal control guidelines, a review of the units' NAFA organization charts, and discussions with the exchange officers/managers during visits to each of the activities.

The internal control questionnaire was distributed prior to the visits to the exchanges with the intention of informing the exchange officers at each activity of the purpose and interests of the survey. The questionnaire checklist style was utilized as it added direction and structure to the survey, provided simple evaluation and comparison, and paralleled the style of internal control checklists commonly used throughout the business environment. This particular style was also used to generate feedback pertaining to its usefulness and acceptance for Coast Guard purposes.

External audit reports were reviewed to gain insight to auditors' opinions of the importance of the key elements of an internal control system and their application to Coast Guard NAFA's. Initial intentions were to note the similarities stressed in these reports. However, the review generated increased interest as most of the reports contained only financial information. There was little attention to management controls.

Unit established NAFA procedures were reviewed to determine command awareness and interpretation of internal control concepts given the limited service-wide guidance.





The review of the organization chart provided initial familiarization with the various activity functions and provided data useful in evaluating separation of responsibility criteria.

The findings of the survey are reported below categorically by the key elements of internal control as presented in the previous chapter. In addition, the findings are further subdivided, when possible, into the small, medium, and large exchange categories.

#### A. CASH RECEIPTS AND DISBURSEMENTS

No cash control discrepancies were noted on the returned questionnaires. A review of units' guidelines for cash control, however, revealed some interesting results. Only one of the large units had formally established cash management procedures while the other two exchanges operated informally on what had been traditionally done. Personal observation of the cash control systems at these other activities, however, indicated that separation of responsibility was being achieved and other cash controls were adequate in terms of the recommended policy guidance presented in Table I. The cash control system at a small unit, the USCGC BURTON ISLAND, did not provide separation of responsibility. Some control was established, however, through frequent cash counts and verification by an individual other than the person who controlled the cash. Personnel at the medium exchange were not



designated either through job descriptions nor a unit NAFA responsibility plan to conduct the various cash handling operations.

Information obtained from review of past external audit reports showed only one report that reflected proper cash controls were being maintained. Audit reports of the other exchanges contained financial information only. No mention of evaluation of internal controls was found, however, nor was there any documentation that such an evaluation was requested in the contracts with the auditors.

Although no cash deficiencies were observed during the visits to each unit, discussions with the exchange officers indicated that controls over cash could be strengthened through the documentation of cash handling procedures, particularly for each individual involved (Ref. 3). A well published system enables a reviewer or auditor to trace the handling of cash through the organization and identifies personnel assigned to the various functions.

#### B. INVENTORIES/PURCHASING

Several discrepancies were noted on the questionnaire, the most significant of which are listed below:

- perpetual inventory records not maintained or if maintained, not verified
- deliveries from stores are not made on requisition
- no organized purchasing department at the medium size unit



Some of the weaknesses result from limited personnel allowances at the unit and the size of operations. For instance, creating a purchasing department at a small or medium size exchange would probably not prove cost effective in terms of additional internal control provided. A perpetual inventory system was not maintained by one of the large units. However, the inventories were conducted by a professional inventory company periodically. The perpetual inventory system was not maintained at the smaller activity surveyed, however, it was in the development process and should be operational by mid 1979.

Stock transfers from storerooms were not made by requisition at any of the exchanges surveyed. Requests were filled from the stock rooms by verbal authorizations from the storeroom personnel.

A review of the external audit reports indicated that inventory sampling was used to verify the physical count and value of the inventory on hand. Again, the reports omitted comments regarding the managerial controls associated with the audit. Guidelines for internal controls of inventory or purchasing were practically non-existent at two of the units surveyed and at most small exchanges. The exchange officers indicated that a well established and published internal control system for inventories might identify individual responsibility and verification processes to maintain more adequate control over the inventory and its acquisition (Ref. 3).



Based on the review of inventory control procedures currently used, policy guidance should be issued by Headquarters requiring that a perpetual inventory system be maintained and periodically verified by each unit to strengthen internal control. In addition, exchange managers should implement a documented requisition system of delivering inventory from the stockroom to the store. These systems, as agreed upon by the exchange officers, can be instituted at each unit without significant cost or disruption of current operations (Ref. 3). The development of an organized purchasing department, however, would require extensive analysis to determine the costs and benefits of the project, and is considered beyond the scope of this research.

#### C. ACCOUNTS PAYABLE

The returned questionnaire results indicated that one of the more notable discrepancies concerning accounts payable controls of the medium activity surveyed was the failure to maintain ledger accounts of current vendors. Through prior experience, this weakness was also noted to be prevalent at small exchanges. Unpaid invoices were utilized as the control device for payment of bills and year end totals of accounts payable. This method of control is extremely inefficient, even in the smallest exchange, for lost invoices destroy the only customer record of outstanding debts. Although the vendor would most likely maintain accurate records





of the purchase, the extra effort of having to remind a business of credit due strongly suggests lack of control by the customer.

Published procedures for maintenance of the accounts payable system were not available at the units, however, general responsibility for the ledger was stated in a job description for the accountant/bookkeeper position at one large unit. The maintenance of individual subsidiary accounts should be required of each Coast Guard exchange to strengthen the internal controls over accounts payable.

#### D. INVESTMENTS

Problems with investment controls were noted at each activity. The most notable problem was the lack of published internal control guidelines. Neglect of investment opportunities at the medium size unit was evidenced by daily checking account balances far in excess of anticipated needs. Generally, investment opportunities were not available to small units as profits were transferred monthly or quarterly to District or unit morale funds. Thus, cash in the bank could not accumulate sufficiently to generate significant interest if invested.

Units can be made aware of the many low risk investment opportunities available and budget their cash flow to determine potential short term investment capital. In addition, intelligent use of float and the banking system can be



researched to provide interest revenues otherwise not anticipated. Published guidelines can assist the exchange officers/managers in establishing such a system.

#### E. FIXED ASSETS

A review of audit reports and records indicated that NAFA property asset accountability was accurately maintained at only one of the large units surveyed. Fixed asset records at the other large exchange were not updated for depreciation or additions/deletions. Accounts did not even exist at the medium activity. Observations at small exchanges also indicated that no NAFA plant and equipment accounts were maintained. Proper fixed asset controls should be published and budgeted for at each unit to allow for smooth transitions during the replacement of essential NAFA property assets. Accurate accountability of these assets is particularly significant to the larger exchanges due to the amount of equipment necessary to support the system and the amount of capital invested.

Overall, the most notable weakness of the internal control systems surveyed, regardless of size or function, was the lack of published procedures to support the operation. Most likely, this resulted from a lack of such guidelines issued by the Coast Guard. It was noticed during the survey, however, that at least one of the managers was aware of potential internal control problems and was initiating



documentation and procedures to strengthen the controls. This activity, Air Station Mobile, had developed several instructions concerning the internal controls of a few of the key functions (cash handling, purchases, sales) which could be extremely useful, if published, to similar Coast Guard NAFA's.

While many unpublished internal controls did exist at the activities, management apparently did not recognize them as controls. The exchange officers/managers indicated an intense interest in internal control but they had not documented systems at their units and were not able to relate each specific control to an overall system (Ref. 3). Publication of the controls would allow the managers and employees to better understand why they are performing certain tasks, what interdependencies exist within their environment, and how these controls relate to form an effective system. It is therefore concluded that utilizing the material presented in Chapter II, Table I, and Illustrations 1-6 to construct guidance for field unit compliance can create a base of information from which these units can publish, implement, and review their systems of internal control. Then, once established, these procedures can be tested and periodically reviewed to facilitate the implementation of new techniques and improvements.

Many of the internal control weaknesses noted, especially in the medium and small exchanges, were related to



personnel allowances; generally, sufficient numbers of personnel did not exist to allow for adequate separation of duties. Although personnel allowance is a key element of control, reduced numbers can be adequately substituted for through attentive employee selection and supervision. In fact, the role of the manager/exchange officer is crucial for the small exchange.

Through personal observation, the executive can be aware of employee activities, incoming orders,...., receipt of goods, cash receipts and disbursements, customer complaints, etc. This awareness can contribute to the effectiveness with which the business is internally controlled.<sup>5</sup>

Finally, the survey results noted that the extent of controls varies at each unit due to the size and uniqueness of the activity. Controls that may be effective at some exchanges may not be applicable to others, even of similar size, because of personnel, facility, management, or local environment dissimilarities. Thus, uniformity of internal control does not exist in the Coast Guard NAFA organization, and internal control procedures should not be uniformly required of each activity. This justifies the relevance of the guidelines presented in Table I in that they serve as a basis of a sound system rather than uniform approach to each different level of operation.

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<sup>5</sup>Colby, Robert W. and Grollman, William K., "Internal Control For Small Businesses," Journal of Accountancy, December 1978, p. 66.





Once operating as planned, the activities' internal control systems can be monitored and fine tuned through the use of competent internal audit boards and external auditors. Chapter IV discusses the costs and associated benefits of four external auditing approaches in order to provide the review required for maintenance of an effective internal control system.



#### IV. ANALYSIS OF EXTERNAL AUDITING METHODS

While Chapter III examined current Coast Guard approaches to internal control of Non-appropriated Fund Activities, this chapter reports the results of a cost effectiveness analysis investigating the relevant benefits and costs of four alternative means to review these internal control systems through external audits. This approach was designed to facilitate a quantitative analysis and evaluation of the alternative methods by reducing them to common measurable terms.

The analysis of the four external auditing alternatives was based on the data gathered from the pilot survey discussed in Chapter III and gross sales data from a composite FY77 NAFA report obtained from Coast Guard Headquarters (G-FER) (Ref. 4). For purposes of this analysis, references to "major" exchanges or operations indicates the top twelve Coast Guard units in terms of annual gross sales (over \$2,000,000), or greater than 65% of the service's total NAFA gross sales (See Table III and Illustration 7). Thus, these major exchanges represent a significant portion of the total NAFA business. Focusing on major exchanges also narrowed the scope of the analysis to capture relevant data for aiding decision making, to eliminate unrealistic events (such as a national audit firm inspecting a \$100,000 a year operation), and to concentrate on the units within the



organization which could potentially lead to major financial consequences if mismanaged. The data gathered from the three exchanges surveyed provided a basis to estimate the audit coverage and related costs of the major exchanges for one of the alternatives. This representation was considered valid since gross sales from these exchanges exceeded 15% of the Coast Guard's NAFA generated revenues for FY77 (Ref. 4). However, the intent of the analysis was not considered to be exclusive of the other 88 (approximate) Coast Guard NAFA's.

#### PROBLEM DEFINITION

The rapidly expanding NAFA operations within the Coast Guard have been producing increasing sales at an annual rate of 10-20 percent over the past five years. Annual gross sales for FY79 are expected to reach \$80,000,000, an amount worthy of requiring all major operations involved in the generation of these funds closely scrutinized on an annual basis (Ref. 1). As noted in Chapter II, an effective internal control system provides the means to monitor these operations and contributes to the reliability of the information generated for managerial decision making. In turn, the internal control system must be reviewed and evaluated to ensure it is maintained in a manner consistent with the growth of the activity and concurrent with Coast Guard policy. As indicated in Chapter III, one method available



to the Coast Guard to conduct this review of the internal control system is through the use of an external auditor.

## OBJECTIVE

The analysis investigated the alternative means of reviewing NAFA internal control systems. A benefit measure was developed along with estimated costs of each approach to determine the most cost effective alternative. In addition to the review and evaluation of the internal control system, the external audit would also include a full-scale financial audit.

The assumption is made that all Coast Guard NAFA's with annual gross sales exceeding \$150,000 conduct external audits in accordance with the requirements stated in the Coast Guard Non-appropriated Funds Manual (CG-146).

## ALTERNATIVES

Four alternatives, each meeting the established requirement of utilizing external auditors, and each essentially capable of meeting the objective of the analysis, were considered for the audit of the major exchanges. They are:

1. Utilization of a national accounting firm.
2. Utilization of local accounting firms (the present approach used).
3. Developing an internal Coast Guard Audit Agency (external to NAFA's).
4. A mix of alternatives 1 and 2, i.e., six audits by a national firm and six by local accounting firms.





Alternative 1 - This alternative considered the use of a national accounting firm to conduct audits of the major NAFA's. In an interview with an audit manager of one of the "Big Eight" accounting firms, it was determined that prior to engaging in a contract with the Coast Guard, it must be understood that a management advisory service study (MAS) would be necessary of all units affected. The costs of the MAS would be fairly substantial (\$50,000 to \$100,000) depending on the size of the operations, the internal control condition of the activity, and the location of the activities. It was agreed that this cost could be amortized over a period of years as an inclusion to the annual operations expense or could be written off as a sunk cost prior to the commencement of the audits (Ref. 5).

Under this alternative, all exchanges included in the audit would be considered branches of a central office whose headquarters would be located at the Coast Guard Headquarters in Washington, D.C. The audits would be conducted independently, but simultaneously by local representatives of the firm. Only one report would be submitted for the entire audit. However, it would report on each activity's operation. A potential Coast Guard policy could require each unit to fund the audit based on a percentage of its gross sales.

A management/internal control audit would be conducted in addition to the audit of the financial condition.



Approximately 2000 hours would be required to complete the audit. The same criteria and concepts would be utilized at each exchange providing a standardized system. Also, consideration would be given to those units with unique problems.

Alternative 2 - The second alternative considers the present method of utilizing local accounting firms to audit the units. However, the scope of the engagement would include a management control evaluation. Under this alternative, each activity is responsible for contracting its own audit firm without formal, centralized guidance or coordination. In the past, the audit reports submitted by the local accounting firms contained only information regarding the financial status of the unit. No mention of management control audits and related findings was made.

The audits would be conducted at each unit as specified in the individual contracts, usually near the end of the accounting period, but independent of the timing of the other Coast Guard NAFA's. The final report would be submitted to Headquarters and to the unit audited.

Alternative 3 - This alternative proposes that an internal audit agency, limited to Coast Guard operations, be created to review management control of NAFA operations. Operations of the Naval Audit Service can serve as a guide in developing such an agency's structure and objectives. The Naval Audit Service, for instance, provides internal communications,



measurement of goal accomplishment, identification of bottle-necks, personnel policies, financial control systems, improvements in operations, compliance audits and cash controls, and assistance can range from surveys taking a few man-days to full-scale operations ranging up to several months (Ref. 6). Initial costs of establishing this agency could be allocated to the operating expenses each year based on an estimated life expectancy of the program, or could be treated as a sunk cost. The service could be utilized to conduct management/internal control and financial audits of selected activities throughout the year. Also, this service could be modified to provide programs tailored to the specific needs of the individual activities since this occurs in the Navy and can be specified for the audit firms discussed in alternatives 1 and 2.

Alternative 4 - This alternative proposes utilization of a national accounting firm for the first six major exchanges and using local accounting firms for the next six exchanges (Table III). Subjecting only six major exchanges to a national firm's audit produces an audit of over 46% of the service's gross annual sales from NAFA's and reduces the cost due to the reduced scope and to the proximity of these activities (at present) to offices of national accounting firms.



## ANALYTICAL APPROACH/CRITERIA

The approach used to measure the expected benefits utilized a weighted internal control questionnaire, in Table IV, as the criterion with which each alternative was evaluated. The concepts and principles of the weighted checklist were derived from an article which appeared in the July 1978 issue of the Journal of Accountancy, "A Small Business Internal Control Questionnaire". As the questionnaire was adapted from material copyrighted by the American Institute of Certified Public Accountants, Inc., permission to publish this material was granted by the publication coordinator of the periodical (Ref. 7). The questionnaire was considered a valid criterion to measure the benefits of an internal control review because it both captures the major features of internal control as discussed in Chapter II and assigns relative weights to various features based on their relative importance to the internal control system. It was considered particularly applicable to Coast Guard NAFA's as one definition of a small business was expressed as

"managed by one or a few key executives whose talents are most apt to lie in marketing, manufacturing or research and development rather than in 'staff-type' functions like finance and accounting...and who dominate the affairs of the company to a far greater degree than in larger corporations."<sup>6</sup>

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<sup>6</sup>Ibid., p. 64.





Since the expected benefits of an internal control review could not be measured directly without an actual audit, a proxy measure for each alternative was developed based on the questionnaire (Table IV). This measure approximated the extent to which each alternative audit method would review an internal control system. The approximation was accomplished by obtaining materials indicating how each alternative method would likely review the internal controls in force at a given NAFA. Thus, for alternative 1 a checklist was obtained in an interview with an audit manager of Haskins, Sells & Deloitte. The material for alternative 2 was obtained through discussions with the exchange officers/managers of the units surveyed. Material for alternative 3 was based on Navy Audit Program No. 34-Local Audits of Non-appropriated Fund Activities (Ref. 8). It should be emphasized that this publication provides only a rough estimate of coverage due to its emphasis on the local audit board evaluation. Its content was derived from Naval Audit Program No. 33, which presents broader internal control guidelines to Naval activities. Naval Audit Program No. 33 was unavailable to the author during the study and was not utilized. Material for alternative 4 were based on the data from alternatives 1 and 2.

As indicated in Table IV, the maximum weighted total of the Journal's questionnaire is 181 points. The extent of review each alternative would be expected to achieve is then



measured by comparing the coverage indicated by the internal control review material to the questionnaire and summing the points for each feature covered. The proxy measure is then determined on an index of 1.00 through use of the formula

$$\text{proxy benefit measure} = \frac{\text{Points "earned" by the expected coverage of an alternative}}{\text{total Journal points (=181)}}$$

An attempt was made to validate the questionnaire by discussing it with the audit manager of the national accounting firm and the exchange officers during the visits. However, no adjustments were indicated. While no claim is made for the absolute validity of the checklist, the same scale is used for each alternative to provide a valid relative ranking.

The costs of each alternative were then estimated. A cost-benefit ratio was computed for each alternative by comparing the total estimated costs to the total proxy benefit measure (cost/proxy benefit measure). These ratios provided an estimate of the relative effectiveness of each alternative in reviewing the internal control system, and thus were utilized to rank the alternatives.

#### COST - BENEFIT ANALYSIS

The measure of estimated benefits of alternative 1 as derived from the criteria in Table IV was 152 of a maximum of 181, or .84. The costs of alternative 1 were estimated by the audit manager interviewed based on historical costs



from previous Government audits whose gross sales were similar to the Coast Guard's NAFA's. Costs of contracting the national accounting firm were estimated at .1% of gross sales (Ref. 5). Applying this to the FY77 gross sales data of the major exchanges produces a rough estimate of the cost of the audit as \$65,000 ( $.001 \times 65,000,000$ ). This is valid providing the firm maintains a representative in the vicinity of these units. As several of the activities listed in Table III such as Kodiak, Alaska, Cape May, New Jersey and Elizabeth City, North Carolina may not have local offices in the area, increased travel and per diem costs would be incurred. In these instances, the accounting firm may sub-contract a local accounting firm to conduct the audit for them. For analysis purposes, however, MAS and sub-contract costs will not be included. The cost/proxy benefit ratio for alternative 1 would be \$428 ( $65,000/152$ ).

The total estimated benefits of alternative 2 are 115 (See Table IV). The proxy benefit ratio is .64 ( $115/181$ ). The costs of alternative 2 were based on the actual costs of external audits for several of the large exchange activities. The average annual cost/unit of auditing the major exchanges under alternative 2 (as verified by Coast Guard Headquarters) was \$8,000, or \$96,000 for twelve exchanges (Ref. 1 and Table II results). This calculation was questionable, however, because at least one of these units used qualified members of its own civilian staff to conduct the audit.



Problems could arise as to what rate their fees should have been, and raised questions with respect to the independence of the auditors. The cost/benefit ratio for alternative 2 was \$834 (96,000/115).

The estimated proxy benefits of alternative 3 are 100 while the proxy measure ratio is calculated at .55 (100/181). Given the absence of a present internal audit agency, the costs of alternative 3 were difficult to quantify. However, they were roughly determined based on a comparison of Navy Audit Service internal control administrative costs to the total annual volume of gross sales produced through the Navy Resale System. Gross annual sales of the Navy Resale System totalled nearly one billion dollars in FY77. The size of the audit staff included one CDR, one LCDR, four senior auditors (UA 14), and thirteen internal auditors (UA 10) (Ref. 9). The administrative costs of this staff of 19 approximated \$350,000/yr. providing a cost/gross sale ratio of .00035. Multiplying this ratio by the Coast Guard's \$80,000,000 sales result in a cost of \$28,000. This figure appeared to be unreasonable because it implied that it would require only one UA 14 to run the system. Assuming that the staff would require at least one person of this caliber and probably two internal auditors of the UA 10 wage grade, the administrative cost of the





system, including personnel, travel and per diem, would easily total \$100,000/yr. The cost/benefit ratio for alternative 3, based on this low estimate of \$100,000, is \$1,000 ( $100,000/100$ ).

A combination of alternatives 1 and 2, or alternative 4, produced total benefits of 133.5 ( $(152+115)/2$ ) weighted points. The benefit index was determined to be .74 ( $133.5/181$ ). The cost of alternative 4 was calculated by determining the cost of the top six exchanges in gross sales using the cost rates for alternative 1, and of the second six exchanges listed in Table III utilizing the cost rates of alternative 2. This cost calculated to  $(.001 \times 34,000,000) + (6 \times 8,000) = \$82,000$ . Again, these figures are subject to the same factors listed under each alternative with the exception that the top six exchanges in Table III are located in areas where most national audit-firms maintain branch offices. The assumption could not be made that the lower six exchanges averaged less than \$8,000/audit due to lower sales. The relationship of sales to audit fees was not linear for the local accounting firms as evidenced through the examination of two of the units' contracts. The audit costs for Air Station Mobile were less than those costs for the Academy exchange even though Mobile's gross sales exceed the Academy's total gross sales by \$2,000,000. The costs/weighted points ratio for alternative 4 was \$614 ( $82,000/133.5$ ).



Major assumptions implicit in the cost benefit analysis include:

1. The audit firms were evaluated for the services they provided at the time surveyed.
2. The data was derived from a small sample but was valid for all activities for the purposes of analysis.
3. All auditors were equally capable of performing the same tasks as required in the questionnaire.
4. The questionnaire in Table IV applied equally to all units; uniqueness was not considered in the analysis.

#### EVALUATION OF ALTERNATIVES

The primary criterion of the analysis was expected coverage by the audit alternative compared to the questionnaire. Then, the estimated cost of the audit was related to the value of the service provided. Figure 1 summarizes the results of the analysis and shows alternative 1 as the best alternative based on the cost/proxy benefit ratio.

Figure 1

<u>Alt</u>	<u>proxy ben. index based on 1.00</u>	<u>major exchanges costs</u>	<u>cost/ben.</u>	<u>rank</u>
1	.84	\$65,000	\$428	1
2	.64	\$96,000	\$834	3
3	.55	\$100,000	\$1,000	4
4	.74	\$82,000	\$614	2

Sensitivity analysis could be conducted with this model to reflect the impact of costs and proxy benefit variations meeting specific Coast Guard requirements. For instance,



costs of the first alternative would have to increase to .15% of gross sales to make alternative 2 more attractive.

$$65,000 \times .0015 = 97,500 \quad \text{alternative 1}$$

$$8,000 \times 12 = 96,000 \quad \text{alternative 2}$$

Although the cost/benefit analysis indicates that alternative 1 is the most cost effective approach, the selection of the external audit method should not be made without first considering the other non-quantifiable factors. Advantages of alternative 1 include providing a uniform approach to the audit (forms, hours, internal control concepts), the reputation of the firm, and the introduction of outside authoritative knowledge to strengthen the internal control system. In addition, only one audit report would be prepared and reviewed for the exchanges audited. A disadvantage of alternative 1 concerns the potential difficulties encountered due to geographic location. The possibility exists that a firm may not maintain an office in the proximity of a major Coast Guard exchange resulting in a sub-contract to a local firm, potentially with less ability. Another potential risk concerns the separation of continuity as the auditors move throughout the firm to different positions. Also, coordination would be required to schedule the timing of the audits to occur at approximately the same time.

A significant advantage of alternative 2 is the continuity that generally exists for the local, established accounting firms. Also, audits under this alternative are



scheduled independently by each unit at their own convenience, not by a central authority. Disadvantages of alternative 2 include the review of many individual audit reports vice one, the non-uniform approach to the conduct of the audit, and the possibility of selecting a sub-standard audit firm.

A significant advantage of alternative 3 concerns the initial familiarization of the audit staff with the environment of the activity. Other outside audit agencies would probably require much more time and effort to learn the operations of the military exchange system. In addition, the threat of the outside image of private consultants is reduced (Ref. 10). Possible disadvantages of this alternative include the physical limitations due to small size of the staff, the caliber of professionalism, the questionable adherence to the "independence" standard, and the possibility of the staff failing to keep current in auditing concepts. Also, the feasibility of the establishment of the agency must be determined.

The advantages and disadvantages of alternative 4 are already stated in alternatives 1 and 2 with one exception. The shifting in gross sales ranking among the major exchanges may present a problem in determining which exchanges should be audited by the national firm and which audited by the local firm.

Utilizing the quantitative factors only, the most cost effective approach of providing the external auditing





capability to Coast Guard NAFA's is through the national accounting firm. When considering the non-quantifiable factors, however, the selection of the appropriate method is not so distinct as each alternative offers several advantages and disadvantages which management must carefully evaluate during the selection process.

Many of the factors were not checked on the questionnaire in Table IV for alternatives 1 and 2 because the information utilized to generate the proxy benefits were constructed to evaluate private companies which are profit motivated and operated by expert businessmen unlike the typical Coast Guard exchange. Discussions with the audit manager and the exchange officers at the units visited indicated, however, that adjustments could be made during each audit to account for the uniqueness of each unit. Coverage under alternative 3 could also be modified by the Coast Guard to deal specifically with each unit. Thus, in the event it is determined that each alternative can be modified to produce equal benefits, the criterion for selection of the appropriate external auditing method becomes least cost.

The chapter has presented the costs of the various alternatives in the analysis and determined proxy benefit measures of effectiveness based on a weighted questionnaire. It must be realized, however, that the data utilized in determining these measures were estimates only and derived



from a sample survey of Coast Guard exchanges. As the questionnaire in Table IV is refined to relate more directly to Coast Guard audit objectives, the validity of the approach will be strengthened to provide more accurate information for the selection of the most appropriate external audit method.



## V. CONCLUSIONS AND RECOMMENDATIONS

Internal control systems for Coast Guard Non-appropriated Fund Activities are needed both to control expanding and more complex operations with limited business management expertise and to provide the basis for external financial audits. As pointed out in Chapter II, the establishment of strong internal controls not only provides for the protection of assets, but also creates a system on which management can rely for accurate information to monitor operational effectiveness and efficiency, and which external auditors can utilize to determine the extent and direction of the field work needed to conduct financial audits.

Chapter II discussed major internal control elements considered necessary for the efficient operation of Coast Guard exchanges. In order to recognize the variations in the sizes of Coast Guard NAFA's, the controls for the elements were presented categorically applicable to small, medium, and large exchanges whenever the distinction was required. Although the sources utilized to derive the data presented in the chapter applied to private business, it was determined that many of these same controls were pertinent to the military resale system as well.

The results of a survey conducted at three representative Coast Guard exchanges were reported in the third chapter. The survey confirmed that internal controls presented in



Chapter II were necessary and applicable to the Coast Guard NAFA system, and that increasing levels of control were required to correspond to the increasing size and complexity of operations. It was determined that several of the unit managers did not possess the expertise required to design and implement strong internal control systems without detailed guidance. In spite of the limited guidance provided by Coast Guard Headquarters, however, it was observed that exchanges did maintain internal control systems ranging from strong to weak. Basically, the managers of the stronger systems recognized that internal controls were essential to their operations and provided for the implementation of a system, whereas the managers of the weaker systems failed to understand the reasoning behind many of the practiced controls. In addition, the stronger internal control systems were well documented while the weaker systems were not. This documentation not only provided guidance for the system operation, but also enabled management and the employees of the activity to better understand why certain functions were required and what inter-dependencies existed within the system.

The survey also found no documented management control evaluations by the external auditors. Since it was established in Chapter II that a study of the internal control system was an essential determinant of an external auditor's direction of effort, it would be desirable to obtain





documentation of the evaluation of internal control conducted during the audit in addition to the external auditor's recommendations.

Chapter IV looked at the potential methods of providing this external audit capability and analyzed the potential effectiveness of each alternative in evaluating internal control systems. The analysis indicated that the utilization of a national audit firm would probably be more cost beneficial than the contracting of several local accounting firms or the development of a service-wide audit agency for larger Coast Guard activities. While further research of the external auditing capability is considered necessary, a proxy measure of effectiveness was developed to assist in the selection of an external audit approach.

Time and fiscal constraints prevented the inclusion of all pertinent factors and various approaches necessary to adequately conclude the appropriate methodology of providing the most effective internal and external capabilities to Coast Guard NAFA's. It is therefore recommended that the following areas be further researched as part of a continuing effort to improve the Coast Guard's NAFA system:

- development of a service-wide audit agency. Detailed cost and feasibility studies could be conducted to determine more precisely the costs and benefits of the program. The experiences of other service audit agencies can be utilized for establishing the basis for these studies.



- possible use of the Naval Audit Service on a reimburse-able basis. Negotiations could be performed at the Headquarters level in order to determine the extent, given the acceptable feasibility, of cooperation required to utilize the services.

- explore the use of other national accounting firms. Contact could be made with these firms to determine feasibility, costs, and scope of their audits. Initial contacts can be made with the firms the Coast Guard has previously contracted to conduct studies.

- strengthening of the validity of the Journal of Accountancy questionnaire or developing other such criteria for internal control evaluation of Coast Guard NAFA's. The purpose of the questionnaire in the analysis was to provide a basis on which to measure all alternatives equally; it does not indicate that the questionnaire is absolutely valid, however, for each Coast Guard operation or each external audit. The checklist might be improved by distributing it to a larger sample of exchanges and then determining its applicability at each level of operation.

- once the questionnaire is refined, increase the distribution to Coast Guard exchanges in order to expand the study to represent a more significant percentage of Coast Guard's NAFA's. This expanded study could reinforce the results of the pilot survey, refute some of the results of the pilot study, and possibly produce findings not discovered in the pilot study.



- a further standardization of internal control criteria based upon the size of the operation. Guidelines should contain standard criteria basic to any internal control system. However, they must also account for the various levels of operations and uniqueness of the units to which they apply. Further information could possibly be obtained through the utilization of an outside consultant or through actual examination of several Coast Guard exchanges within each category.

- more internal control guidance be provided to field units. If the service is willing to allow its NAFA operations to continue to deliver increased benefits to its customers, it must provide proper guidelines to assist exchange managers in maintaining a system which will foster this growth. Managers can utilize this information to design, improve upon, or review their own systems of internal control. This guidance could be issued in a change to the Coast Guard NAFA Manual (CG-146). The contents of Table I and the illustrations can be utilized to assist Headquarters personnel in developing these guidelines.

- determine the feasibility of contracting out certain NAFA operations to business service bureaus. For instance, consultants with these bureaus could be utilized to periodically evaluate various NAFA functions such as inventory management, payroll or financial accounting procedures.

- that documentation of the evaluation of internal control



conducted by the external auditor be required in all contracts with external audit firms.

In conclusion, the importance of internal control must be stressed at each level of the Coast Guard NAFA organization. The recognition of and compliance with strong internal control policies at each individual unit will contribute to the achievement of Coast Guard objectives concerning effective management and efficient operation of it's NAFA system.





TABLE I

SAMPLE INTERNAL CONTROL QUESTIONNAIRE

	YES	NO	N/A
A. CASH RECEIPTS			
* 1. Are bank accounts properly authorized?	___	___	___
2. Is the mail opened by a person:			
a) Who does not prepare the bank deposit?	___	___	___
b) Who does not have access to accounts receivable or the general ledger?	___	___	___
3. Does the person who opens the mail list record receipts before turning them over to the bookkeeper?	___	___	___
4. Is the listing subsequently traced to the cash receipts journal?	___	___	___
* 5. Are cash receipts deposited daily and intact?	___	___	___
* 6. Are over-the-counter receipts controlled by cash register tapes, counter receipts, etc.?	___	___	___
* 7. Are the machine totals checked by someone other than the cashier?	___	___	___
* 8. Are the daily totals and numerical sequence checked by someone other than the cashier?	___	___	___
* 9. Are cash overages and shortages shown on the daily activity reports and recorded on the books?	___	___	___
*10. Are bank deposits certified by means of:			
a) Duplicate deposit slips stamped by the bank or	___	___	___
b) Entries in the pass book?	___	___	___
*11. Are employees who handle funds bonded?	___	___	___
*12. Do two different people reconcile the bank records and make out the deposit slip?	___	___	___



TABLE I (cont'd)

	YES	NO	N/A
*13. Are checks returned by the bank for insufficient funds controlled and a follow-up maintained?	___	___	___
*14. Are the cash receipts properly safeguarded at all times?	___	___	___
*15. Are daily receipts kept separate from the petty cash fund?	___	___	___
16. Does any person in the cashier's department (answer NO for proper control):			
a) Prepare sales invoices?	___	___	___
b) Maintain the sales record?	___	___	___
c) Have access to the accounts receivable ledger?	___	___	___
d) Have access to customer statements?	___	___	___
e) Authorize credit extension?	___	___	___
f) Approve discounts, returns, or extensions?	___	___	___
g) Sign notes payable?	___	___	___
h) Prepare, sign, or mail checks?	___	___	___
B. CASH DISBURSEMENTS			
* 1. Are all disbursements, except those from petty cash, made by check?	___	___	___
* 2. Are printed prenumbered checks used and kept under control?	___	___	___
* 3. Are voided checks properly mutilated and held for inspection?	___	___	___
4. Is a check protector used?	___	___	___
* 5. Is the exchange officer's signature required on checks?	___	___	___
* 6. Does the exchange officer sign checks only after they are properly completed?	___	___	___
* 7. Are all checks made payable to a person or a company?	___	___	___
* 8. Are persons who sign checks properly authorized to do so?	___	___	___



TABLE I (cont'd)

	YES	NO	N/A
* 9. Are checks prepared by someone other than the signer?	_____	_____	_____
10. Are persons who sign checks prohibited to:			
a) Have access to petty (or other) cash funds?	_____	_____	_____
b) Approve cash disbursements?	_____	_____	_____
c) Record cash receipts?	_____	_____	_____
d) Post to the ledger accounts?	_____	_____	_____
*11. Are checks presented for signature accompanied by approved invoices and evidence of receipt and acceptance of goods and services?	_____	_____	_____
*12. Are all invoices stamped or marked "Paid" to prevent re-use?	_____	_____	_____
*13. Are bank reconciliations made monthly?	_____	_____	_____
14. Is the person preparing the reconciliation:			
a) Prevented from signing checks?	_____	_____	_____
b) Prevented from handling cash?	_____	_____	_____
c) Prevented from recording cash transactions?	_____	_____	_____
15. Are interbank transfers promptly recorded?	_____	_____	_____
*16. Are long-outstanding checks properly followed and controlled?	_____	_____	_____
17. Is an imprest petty cash fund used?	_____	_____	_____
C. ACCOUNTS RECEIVABLE			
1. Are accounts receivable records maintained independently of cash receipts?	_____	_____	_____
2. Are work order and/or sales invoices prenumbered and controlled?	_____	_____	_____
3. Is credit granted only by exchange officer?	_____	_____	_____
4. Are disputed items and bad debts written off properly controlled?	_____	_____	_____



TABLE I (cont'd)

	YES	NO	N/A
5. Are all charge sales slips numerically controlled?	_____	_____	_____
6. Are monthly statements sent to all customers?	_____	_____	_____
7. Is the credit department separated from the accounts receivable record keeping?	_____	_____	_____
8. Are customer credit limits adhered to?	_____	_____	_____
D. INVENTORIES			
* 1. Are all inventories under centralized control?	_____	_____	_____
* 2. Are safeguards against theft adequate?	_____	_____	_____
3. Are perpetual inventory records maintained for the bulk storeroom on a current basis?	_____	_____	_____
4. Are such records controlled by an office clerk or other individual not responsible for the stockroom?	_____	_____	_____
* 5. Are periodic physical inventories taken?	_____	_____	_____
6. Are properly approved adjustments made to the perpetual records as a result of variances found in the physical count?	_____	_____	_____
* 7. Are surprise spot checks made to ascertain that the perpetual records are maintained currently and are in agreement with the stock on hand?	_____	_____	_____
* 8. Are designated persons held responsible for the control of the various consumable inventories?	_____	_____	_____
9. Are all items purchased delivered to a stores department?	_____	_____	_____





TABLE I (cont'd)

	YES	NO	N/A
*10. Are deliveries made from the stores department on requisition only?	—	—	—
*11. Are obsolete, damaged, and slow-moving items reported to a responsible person?	—	—	—
*12. When inventories are to be counted, are written instructions prepared?	—	—	—
*13. Are inventory counts verified by persons independent of those in charge of the inventory records?	—	—	—
*14. Are inventory sheets and summaries properly initialed by all persons participating in the count, the pricing, the extensions, and the footings?	—	—	—
15. Is insurance coverage adequate?	—	—	—
*16. Are the inventories of stock on hand in excess of current needs?	—	—	—
E. PURCHASES/EXPENSES			
1. Is the purchasing separate from the accounting, the receiving, and the issuing functions?	—	—	—
* 2. Are all purchases (except small items purchased from petty cash) made by means of purchase orders?	—	—	—
* 3. Are purchase order forms prenumbered?	—	—	—
4. Is a copy of the purchase order given to the receiving department as authority to accept goods?	—	—	—
5. Does the accounting department receive directly:			
a) A copy of the purchase order?	—	—	—
b) A copy of the receiving report?	—	—	—
6. Does the accounting department match invoices with:			
a) Purchase orders?	—	—	—
b) Receiving reports?	—	—	—
c) Expense items?	—	—	—



TABLE I (cont'd)

	YES	NO	N/A
7. Does the purchasing department receive a copy of the receiving report?	_____	_____	_____
* 8. Is there a definite responsibility for checking invoices as to prices, extensions, and discount terms?	_____	_____	_____
* 9. Are all invoices for expenses properly supported and controlled?	_____	_____	_____
* 10. Are expense orders and purchase orders properly approved for price, quantity, and supplier?	_____	_____	_____
F. INVESTMENTS			
* 1. Are all investment documents under the control of a custodian?	_____	_____	_____
2. Is the custodian adequately bonded?	_____	_____	_____
3. Are investment documents kept in a safe-deposit box?	_____	_____	_____
* 4. Are investment documents periodically inspected and reconciled with the accounting records?	_____	_____	_____
* 5. Is there proper accounting for all investment income?	_____	_____	_____
* 6. Are purchases and sales of investments properly authorized?	_____	_____	_____
G. FIXED ASSETS			
* 1. Are there detailed records available of property assets and allowances for depreciation?	_____	_____	_____
* 2. Is the exchange officer acquainted with property assets maintained by the activity?	_____	_____	_____



TABLE I (cont'd)

	YES	NO	N/A
3. Are additions to fixed assets originated by requisition or appropriation that shows:			
a) Probable cost?	___	___	___
b) Description of addition?	___	___	___
c) Accounts to be charged?	___	___	___
d) Reason for the addition?	___	___	___
4. Do idle plant facilities exist?	___	___	___
5. Is a work-order system used for major repair jobs?	___	___	___
* 6. Periodically, is an inventory of fixed assets compared with the detail plant records?	___	___	___
H. ACCOUNTS PAYABLE			
* 1. Is there a proper system of requisitioning, purchase order placement and approval, receiving, invoice approval, and approval for payment?	___	___	___
2. Are detailed records of open accounts with vendors reconciled monthly with the general ledger control account?	___	___	___
3. Are vendors' statements compared with the open balance in their accounts before payment?	___	___	___
4. Are all unpaid invoices for goods or services included in the inventory recorded as liabilities for the period under review?	___	___	___
5. Are invoices held in abeyance pending evidence of receipt and acceptance of goods or services?	___	___	___
* 6. Are accounts settled promptly and advantage taken of cash discounts?	___	___	___
I. SALES			
* 1. Are all sale prices governed by approved standard price lists?	___	___	___



TABLE I (cont'd)

	YES	NO	N/A
* 2. Are all sales controlled by use of registers or other mechanical devices?	___	___	___
3. Are all sales (cash and charge) slips prenumbered and properly controlled?	___	___	___
* 4. Are sales slips arithmetically checked?	___	___	___
5. Are cash registers read at the end of each work shift and compared with the actual receipts?	___	___	___
* 6. Are all concessions covered by written agreements?	___	___	___
J. PAYROLLS			
1. Is the payroll approved by the exchange officer before payment?	___	___	___
2. Are the time reports of hours worked approved by the activity manager?	___	___	___
3. Are all employees paid by check?	___	___	___
4. Are payroll computations checked by some one other than the person who prepares the payroll?	___	___	___
5. Are the employees hired by the exchange officer?	___	___	___
6. Would the exchange officer be aware of the absence of any employee?	___	___	___
K. PETTY CASH FUND			
* 1. Is the responsibility for the fund vested in one person only?	___	___	___
2. Is the custodian independent of the employee handling collections from patrons and other receipts?	___	___	___
* 3. Are petty cash vouchers prenumbered, prepared in indelible pencil, signed by the payee, and approved?	___	___	___





TABLE I (cont'd)

	YES	NO	N/A
4. Are vouchers and attachments marked or stamped "Paid" to preclude re-use?	_____	_____	_____
5. Is the use of this fund limited to small expenses of an emergency nature which could not be paid by check?	_____	_____	_____
L. GENERAL			
* 1. Are accounting records kept up to date and balanced monthly?	_____	_____	_____
2. Is a budget system used for watching income and expenses?	_____	_____	_____
3. Are cash projections made?	_____	_____	_____
* 4. Are monthly or quarterly financial reports available?	_____	_____	_____
* 5. Does the exchange officer take a direct and active interest in the financial affairs and reports which are available?	_____	_____	_____
* 6. Is the exchange officer satisfied that all employees are honest?	_____	_____	_____
* 7. Is the bookkeeper required to take annual vacations?	_____	_____	_____



TABLE II  
AUDIT SURVEY

A. Audit information

1. Local audit information:

Number of NAFA audits performed by unit audit boards annually \_\_\_\_\_.

List grade/rate/ranks of auditors + estimated annual manhours

_____	_____	manhours
_____	_____	manhours
_____	_____	manhours

2. Outside public accountant firm audits:

Number of NAFA audits by

outside CPA firms annually	_____
estimate # of manhours	_____
annual cost (recent rates)	_____

3. Comments/additional information on existing audit program.

4. Evaluation of existing audit programs (adequacy, cost, improvements).

B. Internal Control Questionnaire

1. Cash receipts -

- a. Are bank accounts properly authorized by command?
- b. Are cash receipts deposited daily?
- c. Is cash sales money proved against the totals of invoices, cash register tapes, etc.?



- d. Does a person other than the one who prepares the bank deposit make the deposit?
- e. Is the bank-stamped duplicate deposit ticket returned to a person other than the one who prepared the deposit?
- f. Are employees who handle cash bonded?

2. Cash Disbursements -

- a. Are all checks prenumbered by the printer?
- b. Are unused checks properly controlled?
- c. Are persons who sign checks prohibited to:  
Have access to petty cash funds?  
Record cash receipts?  
Post to ledger accounts?
- d. Are persons who sign checks properly authorized?
- e. Are checks signed only after they are prepared?
- f. Do two different persons prepare checks and approve invoices?
- g. Are bank accounts reconciled at least once/month?
- h. Are interbank transfers properly recorded?
- i. Are long-outstanding checks properly followed and controlled?

3. Inventories -

- a. Are all inventories under centralized control?
- b. Are safeguards against theft adequate?
- c. Are perpetual inventory records maintained?
- d. Are all items purchased delivered to a stores dept?
- e. Are deliveries from the stores dept made on requisition only?
- f. Are perpetual inventory records verified by physical count at least once/yr?



- g. Are discrepancies between physical counts and perpetual records investigated and accounted for?
- h. Are written instructions prepared for physical counts?

4. Inventory Acquisitions -

- a. Is there an organized purchasing dept?
- b. Are all purchase orders executed in writing?
- c. Are all purchased orders sequentially numbered?
- d. Are purchase orders properly approved for:  
price?  
quantity?  
supplier?
- e. Does the accounting dept. match invoices with:  
purchasing orders?  
receiving reports?  
expense items?
- f. Are invoices properly approved?
- g. Are shortages and damages properly reported?

5. Accounts Payable -

- a. Is there a proper system of requisitioning, purchase order placement and approval, and approval for payments?
- b. Are subsidiary accounts payable records or unpaid vouchers reconciled with the controlling account at frequent intervals?
- c. Are vendors' invoices verified for accuracy prior to entry?
- d. Are vendors' statements compared with recorded accounts payable?
- e. Is there a procedure whereby invoices are paid within the discount period?

6. Further Information -

- a. Annual gross sales for FY77 \_\_\_\_\_.





- b. Number of complete audits by public accounting firms FY77 \_\_\_\_\_.
- c. Estimated manhours by auditors (external) per audit \_\_\_\_\_.
- d. Estimated manhours for NAFA personnel per external audit \_\_\_\_\_.
- e. Number of complete government audits for FY77 \_\_\_\_\_.
- f. Estimated manhours by government auditors per audit \_\_\_\_\_.
- g. Comments regarding government audits vs. CPA audits (if applicable).
- h. If possible, request copies of audit reports for FY77.
- i. Value of inventory at time of each CPA audit for FY77.

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Note:

This survey was adapted from a draft Commandant Notice 7010 which was unsigned. Permission to use and publish the survey was granted by R. Smith of (G-FER).



TABLE III

LISTING OF TOP TWELVE EXCHANGES AND GROSS SALES

<u>UNIT</u>	<u>GROSS SALES</u>	<u>% OF TOT. SALES*</u>
CAPE COD AIRSTA	7,221,870	9.7
MOBILE AVTRACEN	6,987,679	9.4
MIAMI AIRSTA	5,630,804	7.5
NEW YORK SUPPCEN	5,318,744	7.2
ST. PETERSBURG GROUP	4,593,531	6.2
COAST GUARD ACADEMY	4,523,949	6.1
Sub-totals	<u>34,276,577</u>	<u>46.1</u>
KODIAK SUPPCEN	3,335,651	4.5
BOSTON SUPPCEN	3,061,600	4.1
DISTRICT NINE EXCHANGE	2,655,937	3.6
CAPE MAY TRACEN	2,610,830	3.5
ELIZABETH CITY SUPCEN	2,278,971	3.1
MOBILE BASE	2,071,205	2.8
Sub-totals	<u>16,014,194</u>	<u>21.6</u>
TOTALS	<u>50,290,771</u>	<u>67.7</u>

\*Based on total sales in FY77 of \$74,344,591



TABLE IV

A SMALL BUSINESS INTERNAL CONTROL QUESTIONNAIRE

<u>CATEGORY</u>	<u>WT.</u>	<u>ALTERNATIVES</u>		
		<u>1</u>	<u>2</u>	<u>3</u>
1. <u>General</u>				
a. Are accounting records kept up-to-date and balanced monthly?	<u>5</u>	<u>x</u>	<u>x</u>	<u>   </u>
b. Is a chart of accounts used?	<u>3</u>	<u>x</u>	<u>x</u>	<u>   </u>
c. Is a budget system used for watching income and expenses?	<u>1</u>	<u>x</u>	<u>x</u>	<u>   </u>
d. Are cash projections made?	<u>1</u>	<u>   </u>	<u>x</u>	<u>   </u>
e. Are monthly or quarterly financial reports available?	<u>3</u>	<u>   </u>	<u>   </u>	<u>   </u>
f. Does the exchange officer take a direct and active interest in the financial affairs and reports which are available?	<u>5</u>	<u>   </u>	<u>   </u>	<u>   </u>
g. Is the exchange officer satisfied that all employees are honest?	<u>2</u>	<u>   </u>	<u>   </u>	<u>   </u>
h. Is the bookkeeper required to take annual vacations?	<u>2</u>	<u>x</u>	<u>   </u>	<u>   </u>
2. <u>Cash Receipts</u>				
a. Does the person who opens the mail list mail receipts before turning them over to the bookkeeper?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
b. Is the listing subsequently traced to the cash receipts journal?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
c. Are over-the-counter receipts controlled by cash register receipt tapes, counter receipts, etc.?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
d. Are receipts deposited intact daily?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
e. Are employees handling funds bonded?	<u>5</u>	<u>x</u>	<u>x</u>	<u>   </u>



TABLE IV (cont'd)

CATEGORY	WT.	ALTERNATIVES		
		<u>1</u>	<u>2</u>	<u>3</u>
f. Do different people reconcile the bank records and make out the deposit slip?	<u>10</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>3. Cash Disbursements</u>				
a. Are all disbursements made by check?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
b. Are prenumbered checks used?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
c. Is a controlled, mechanical check protector used?	<u>5</u>	<u>x</u>	—	—
d. Is the Exch. Off. signature required on all checks?	<u>5</u>	<u>x</u>	<u>x</u>	—
e. Does he sign checks only after properly completed?	<u>5</u>	<u>x</u>	—	—
f. Does he approve and cancel the documentation in support of all disbursements?	<u>5</u>	—	—	—
g. Are voided checks retained and accounted for?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
h. Does the E.O. review the bank reconciliation?	<u>5</u>	—	—	<u>x</u>
i. Is an imprest petty cash fund used?	<u>5</u>	<u>x</u>	<u>x</u>	<u>x</u>
j. Does the E.O. never sign blank checks?	<u>5</u>	<u>x</u>	<u>x</u>	—
k. Do different people reconcile the bank records and write the checks?	<u>10</u>	<u>x</u>	<u>x</u>	<u>x</u>
<u>4. Accounts Receivables and Sales</u>				
a. Are work order and/or sales invoices prenumbered and controlled?	<u>5</u>	<u>x</u>	—	—
b. Is credit granted only by the E.O.?	<u>3</u>	—	—	—





TABLE IV (cont'd)

CATEGORY	WT.	ALTERNATIVES		
		<u>1</u>	<u>2</u>	<u>3</u>
5. <u>Notes Receivable and Investment</u>				
a. Does the E.O. have sole access to notes and investments certificates? <u>5</u>		<u>x</u>	<u>x</u>	<u>   </u>
6. <u>Inventories</u>				
a. Is the person responsible for inventory someone other than the bookkeeper? <u>3</u>		<u>x</u>	<u>   </u>	<u>x</u>
b. Are periodic physical invent. taken? <u>5</u>		<u>x</u>	<u>x</u>	<u>x</u>
c. Is there physical control over inv. stock? <u>5</u>		<u>x</u>	<u>x</u>	<u>x</u>
d. Are perpetual inv. records maintained? <u>2</u>		<u>x</u>	<u>x</u>	<u>x</u>
7. <u>Property Assets</u>				
a. Are there detailed records available of property assets and allowances for depreciation? <u>5</u>		<u>x</u>	<u>x</u>	<u>x</u>
b. Is the E.O. acquainted with property assets owned by the activity? <u>4</u>		<u>x</u>	<u>   </u>	<u>x</u>
8. <u>Accounts Payable and Purchases</u>				
a. Are Purchase Orders (P.O.) used? <u>5</u>		<u>x</u>	<u>x</u>	<u>x</u>
b. Does someone other than the bookkeeper always do the purchasing? <u>5</u>		<u>x</u>	<u>   </u>	<u>   </u>
c. Are suppliers' monthly statement compared w/recorded liabilities regular? <u>4</u>		<u>x</u>	<u>x</u>	<u>x</u>
d. Are supp. monthly state. checked by E.O. periodically if disburse. made from invoice only? <u>2</u>		<u>x</u>	<u>   </u>	<u>x</u>



TABLE IV (cont'd)

<u>CATEGORY</u>	<u>WT.</u>	<u>ALTERNATIVES</u>		
		<u>1</u>	<u>2</u>	<u>3</u>
9. <u>Payroll</u>				
a. Are employees hired by E.O.?	<u>3</u>	—	—	—
b. Would E.O. be aware of absence of any employee?	<u>3</u>	—	—	—
c. Does E.O. approve, sign and distribute payroll checks?	<u>5</u>	<u>x</u>	—	—
TOTALS	<u>181</u>	<u>152</u>	<u>115</u>	<u>100</u>
% of total		<u>.84</u>	<u>.64</u>	<u>.55</u>



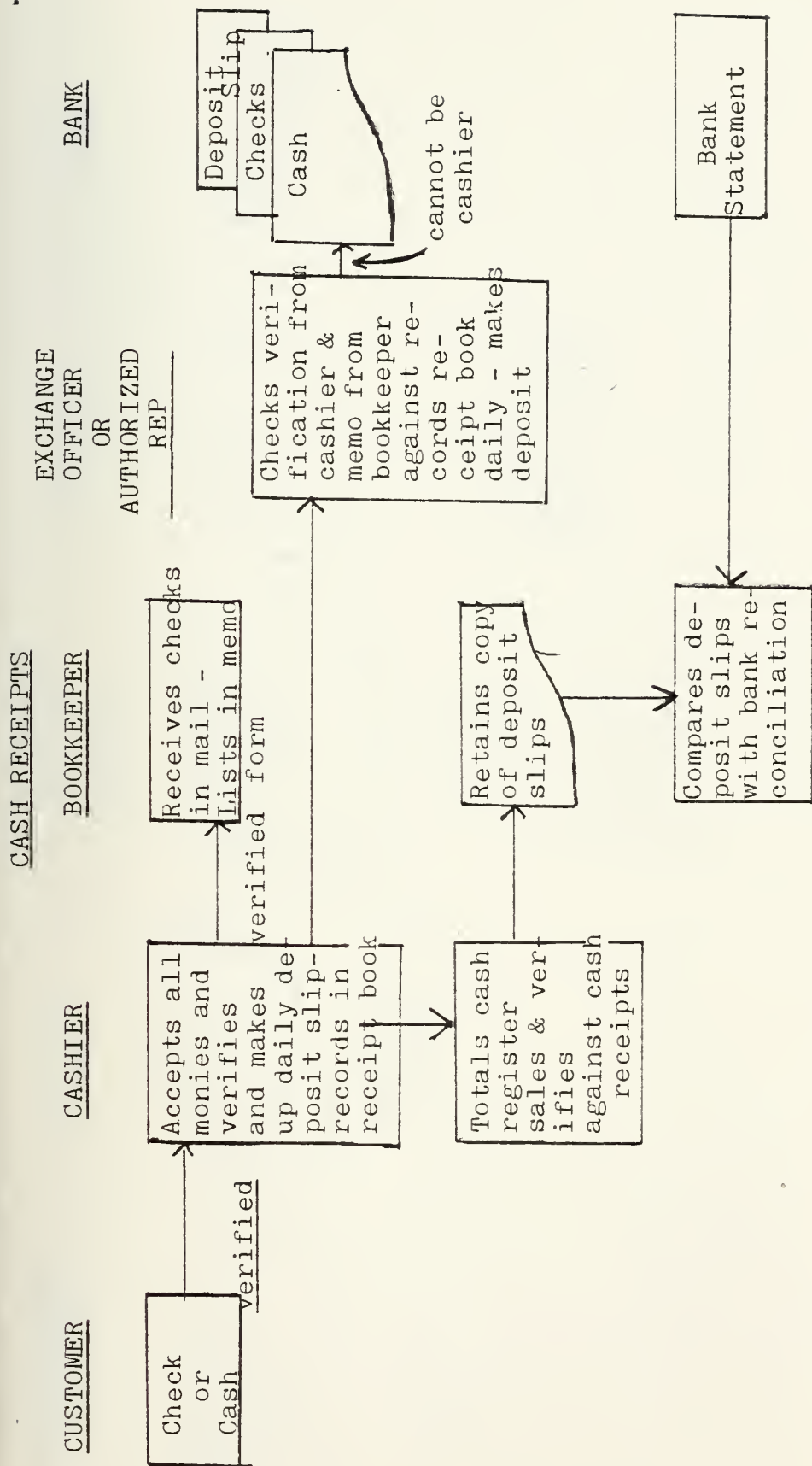


Illustration 1



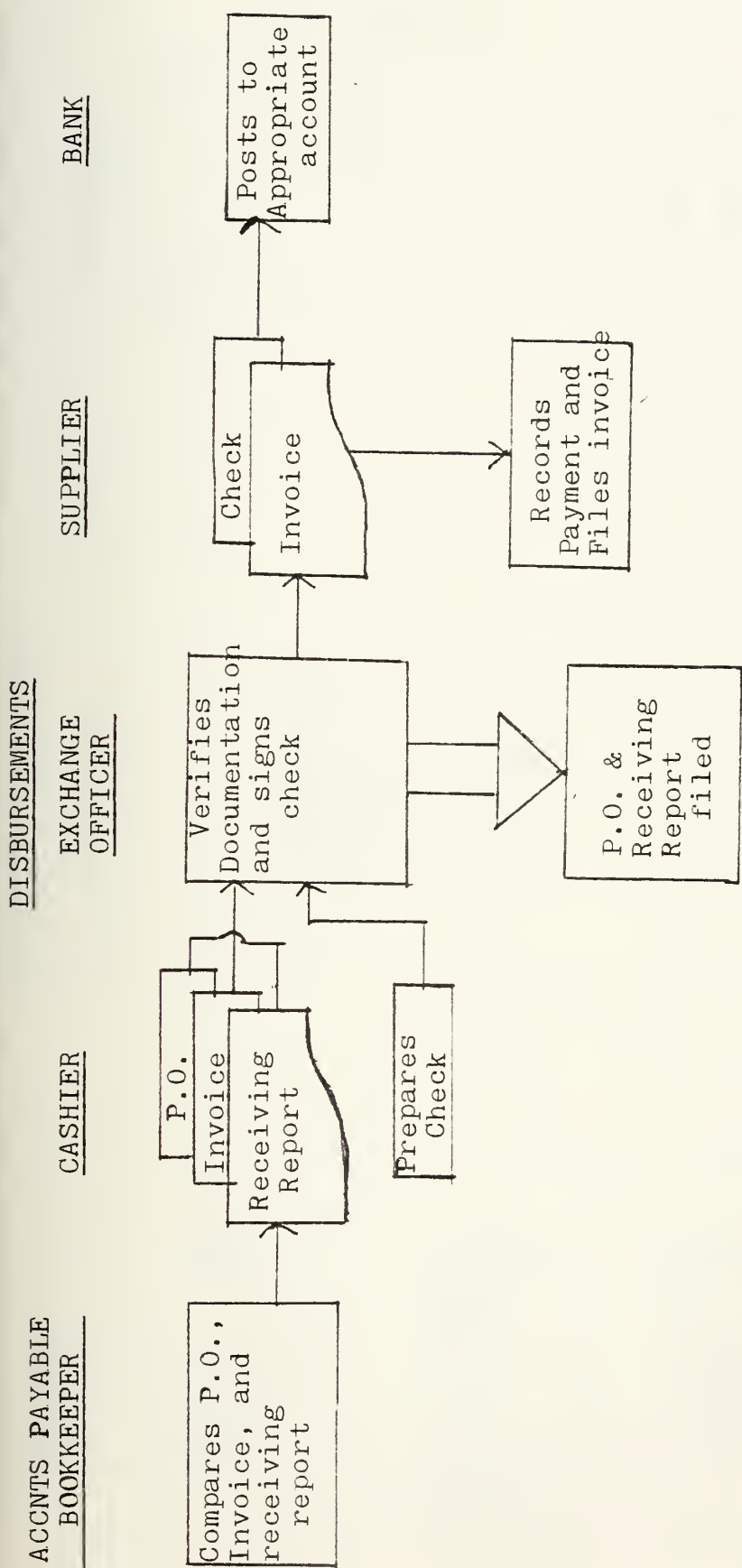


Illustration 2



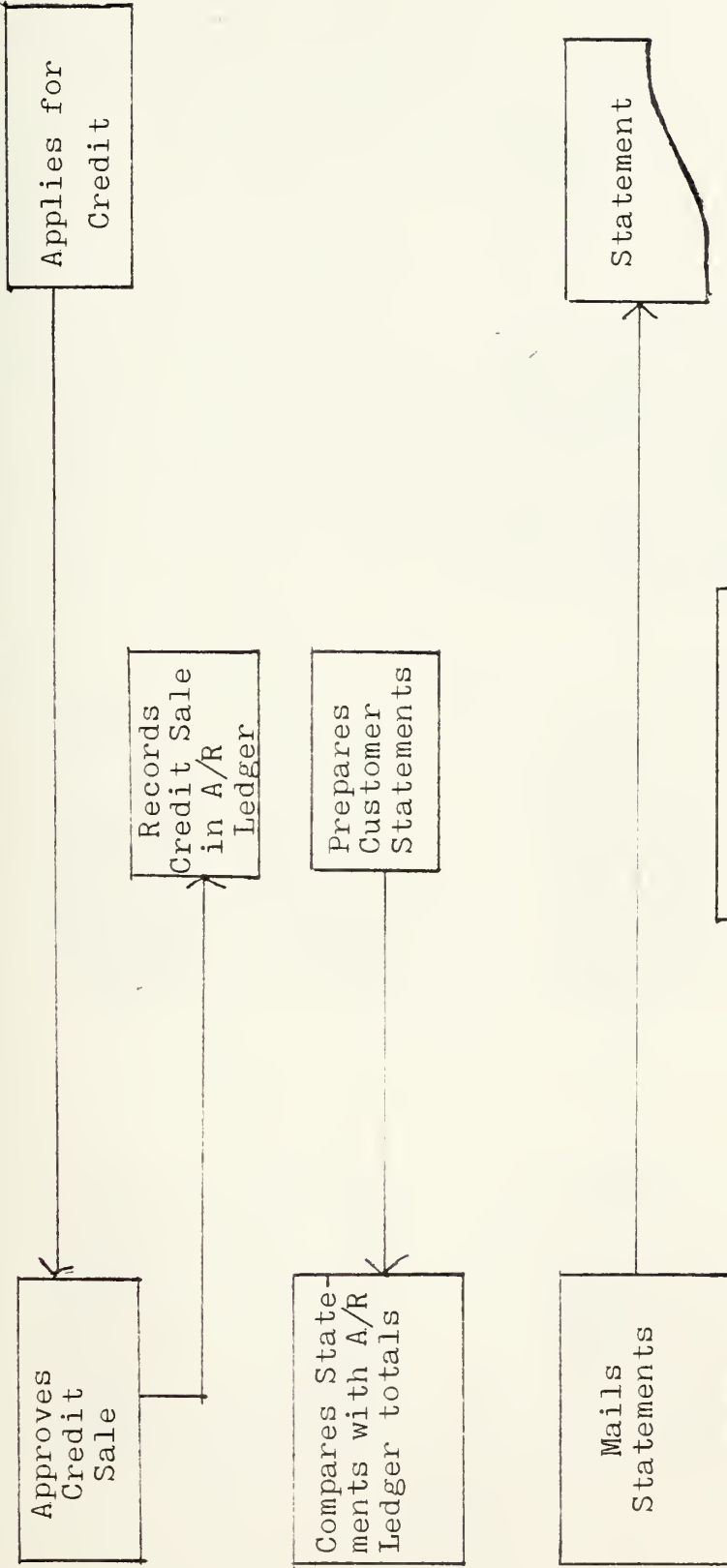


ACCOUNTS RECEIVABLE

EXCHANGE  
OFFICER

BOOKKEEPER

CUSTOMER



Prepares aged A/R schedule to be used by Ex. Officer when collection terms are not being met

Illustration 3



INVENTORY

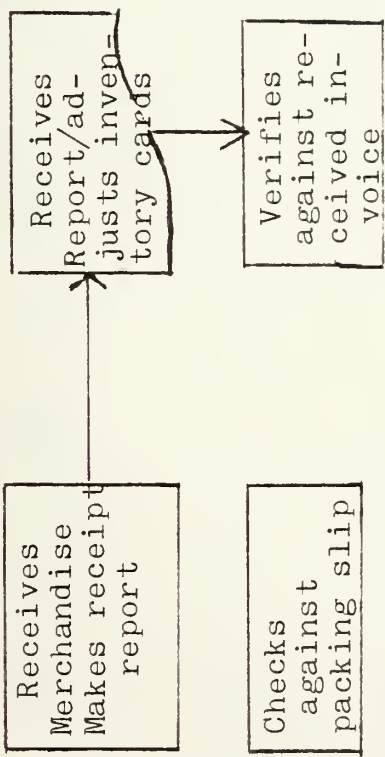
INVENTORY BOOKKEEPER

INTERNAL AUDITORS

EXCHANGE OFFICER

INCOMING

STOCK CLERK



OUTGOING

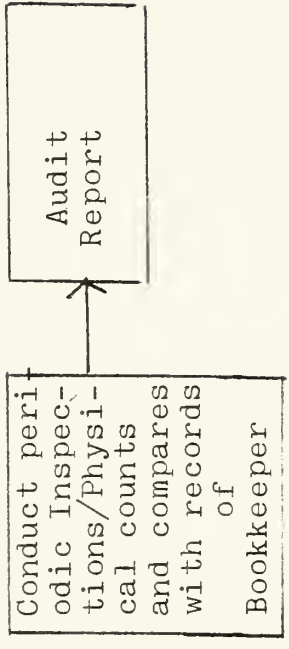


Illustration 4



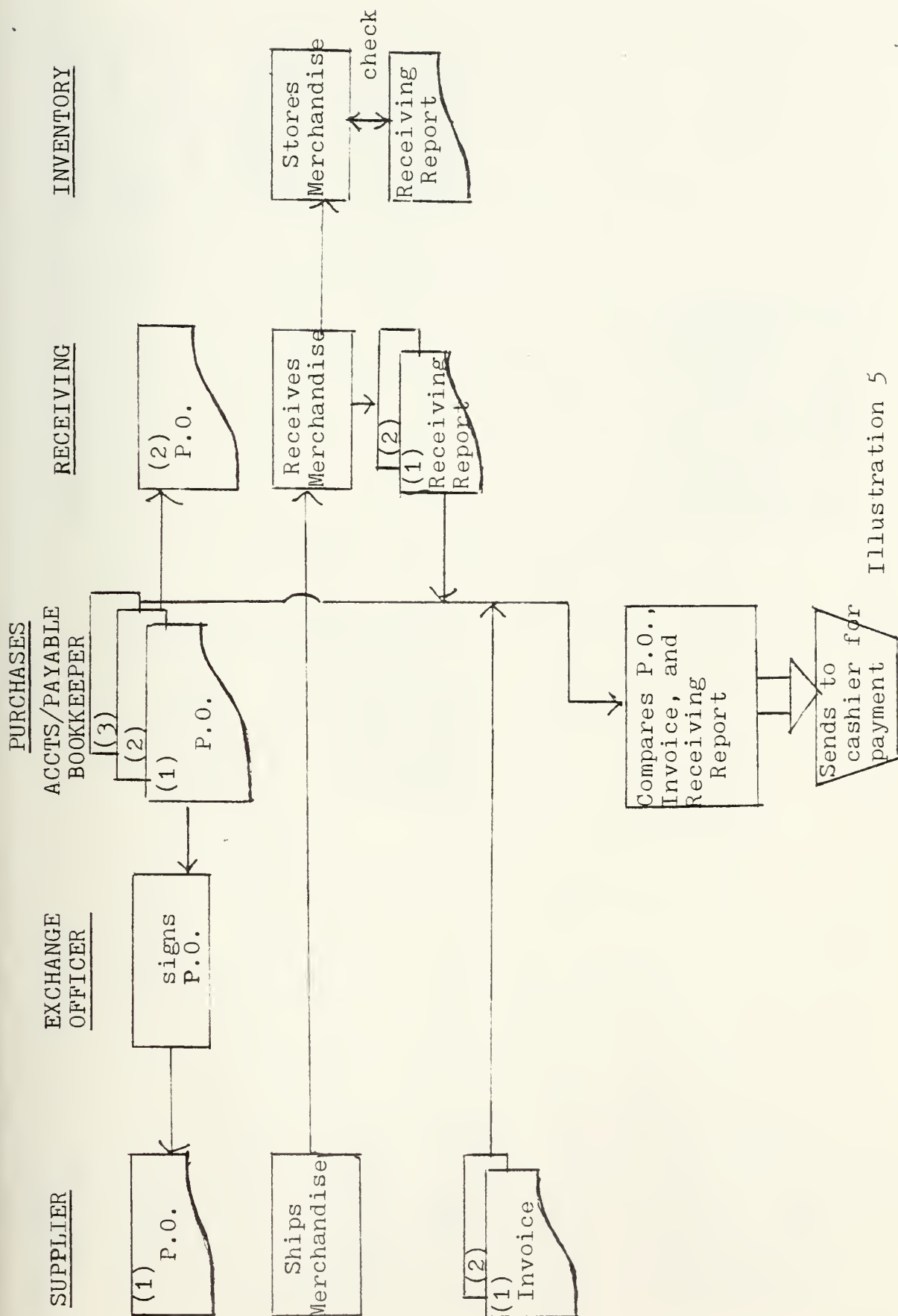


Illustration 5



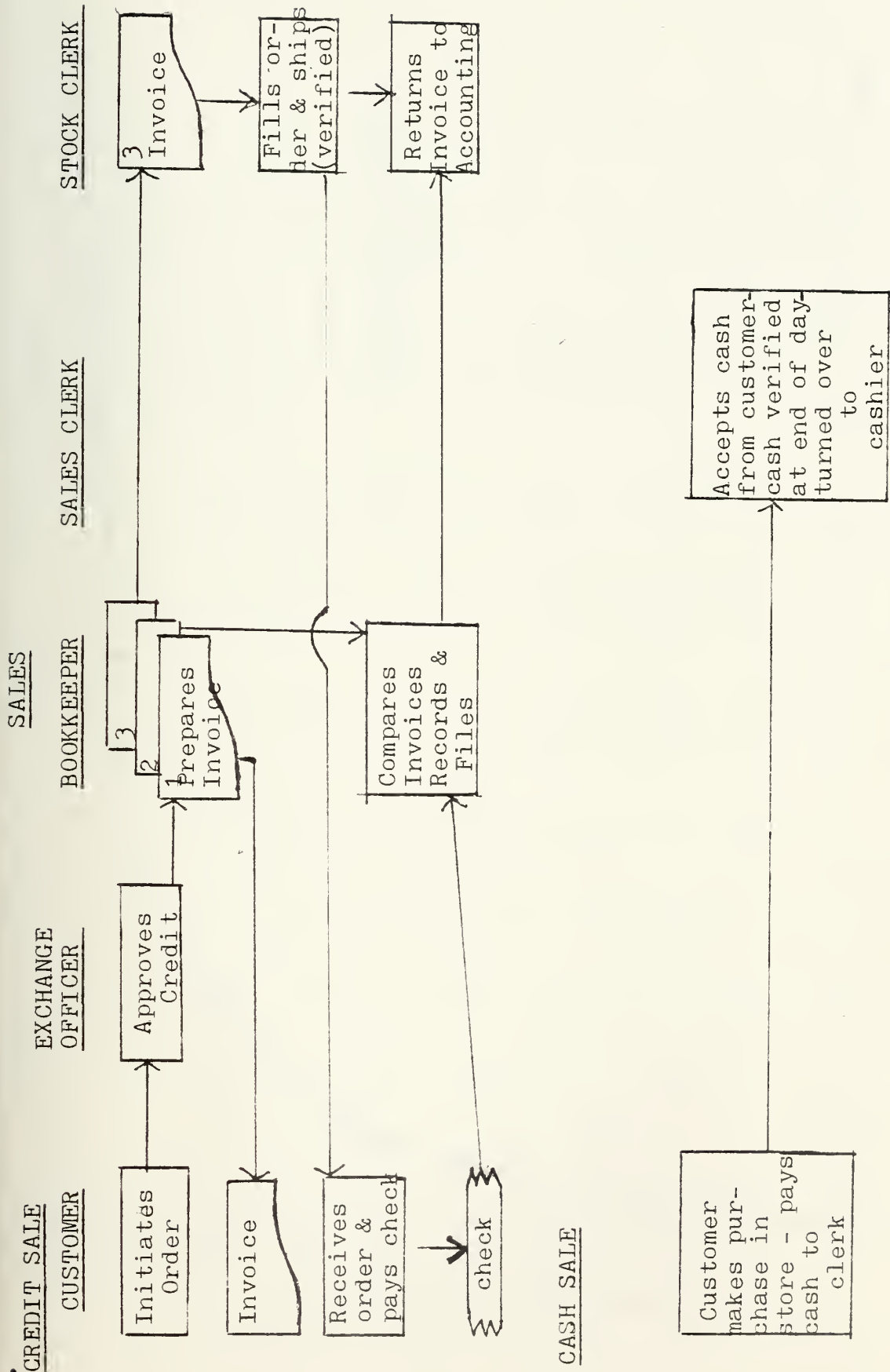
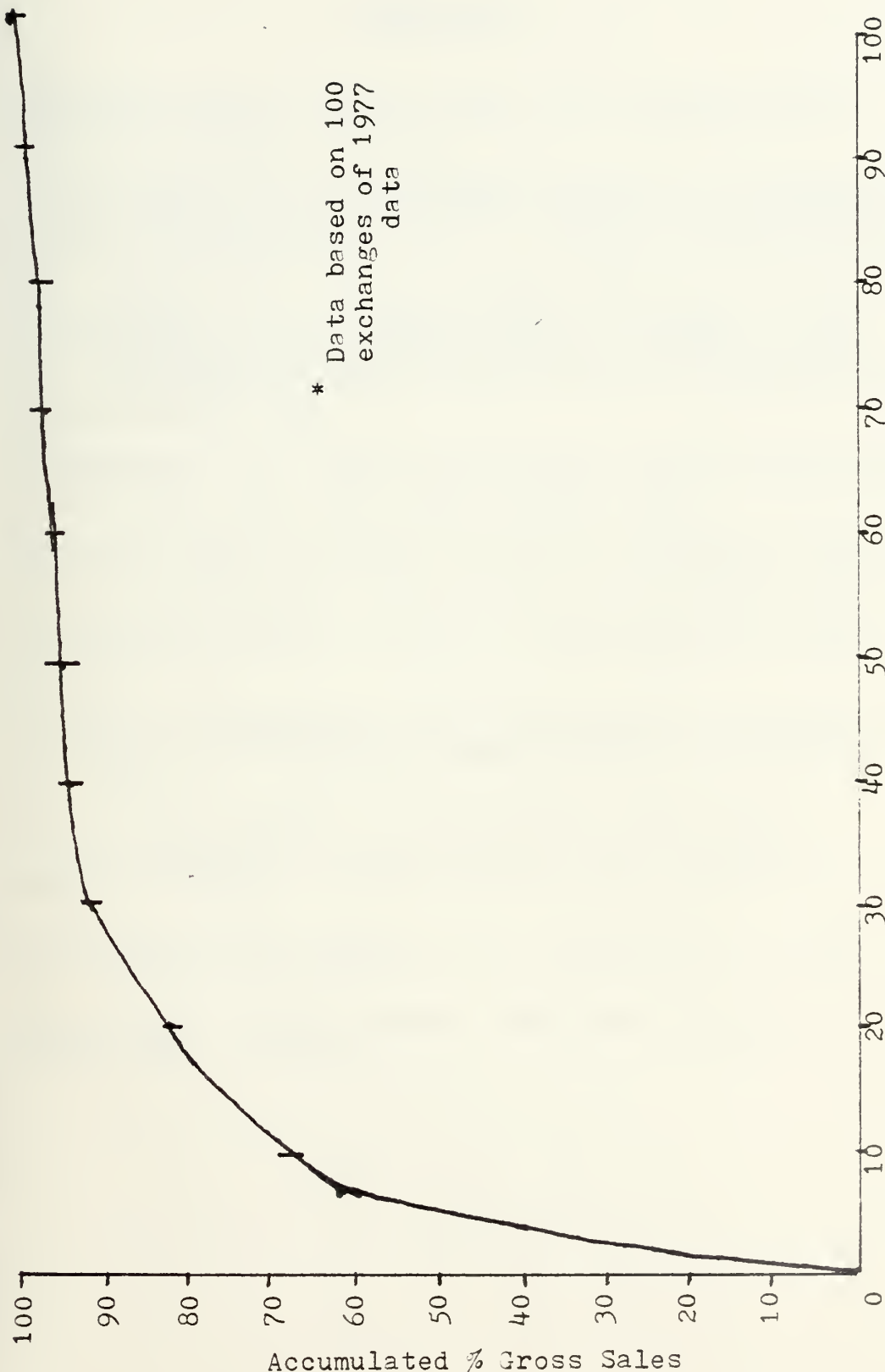


Illustration 6





Graph of Percent Gross Sales vs. Percent Exchanges



Accumulated % Exchanges in Descending Order of Gross Sales

Illustration 7



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### QUESTIONNAIRES

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10. Internal Control Questionnaire, obtained in MN 4162 Auditing class at Naval Postgraduate School from LCDR Robertson, SC, USN, in April of 1978, undated.



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